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ABSTRACT OF THE DISCLOSURE

A mechanical design reuse method includes having a CAD tool replicates a subset of a first modeling representation of a first mechanical design, in response to having received instructions that identify a subpart of the first mechanical design. The reuse method further includes having the CAD tool merges the replicated subset into a second modeling representation of a second mechanical design to effectuate the reuse of the identified subpart of the first mechanical design in the second mechanical design. In one embodiment, the modeling representations are dependent graphs, and the subsets being replicated and merged are sub-graphs of the dependent graphs. The dependent graphs and sub-graphs include nodes directly associated with the subparts of the designs, nodes on which the directly associated nodes are dependent, and arcs linking the nodes together in accordance with their dependency on each other. In one embodiment, the replicate and merging process also provides for a designer the option to transform certain design variables having constant values assigned to become design variables eligible to have their values variably assigned, and vice versa.

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